

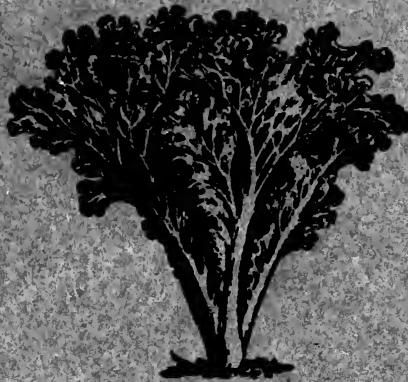
Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

6241
FEB 28 1921

GARDENERS' CATALOGUE

1921



**GRAND RAPIDS GROWERS
ASSOCIATION**

CORNER WEALTHY ST. AND IONIA AVE.

GRAND RAPIDS, MICHIGAN

Announcement

1921

The Grand Rapids Growers Association is a co-operative buying and selling organization, establishing an effective sales service for distributing all products from the Hot-House, Farm and Garden. The part the Association plays in production is in its Seed Department, where it handles Pure Field and Garden Seeds. We solicit the patronage of all who appreciate quality and our prices are without profit.

Never in the history of our country has the grower felt the necessity of united effort in production and distribution of their products and in using their collective purchasing power.

We take pleasure in presenting our second annual catalogue to you for your careful consideration.



The Grand Rapids Growers Association

R. YONKER, *President*
WILFRED S. HANNAH, *Vice-President*
RUDOLPH ZANT, *Secretary-Treasurer*
HENRY J. CHENEY, *Manager*

Special Notice

WE HAVE made a specialty of supplying Market Gardeners (both upland and muck) with the best strains of seeds for their purpose, and our twenty-five years of experience has given us some knowledge of their needs.

While we try to maintain prices as named herein, we reserve the right to change without notice.

How to Order and Remit

READ CAREFULLY

Write your name, postoffice, shipping point or nearest express office, your county and state.

Prepaid Orders

We prepay postage on all vegetable and flower seeds, in packets, ounces, quarter pounds, half pounds and pounds, at prices quoted herein, to any point in the UNITED STATES, when CASH accompanies the order. This does not include these same articles as quoted in FIVE or TEN POUND lots. For such orders consult Parcel Post rates on following page.

We do not prepay postage on Beans, Corn, Peas, Farm Seeds, Onion Sets, Potatoes, Bulbs, Fertilizers, etc. If wanted by Parcel Post, add postage. See Postal Rates on following page.

Bulk Orders of Small Seeds

WE WILL PAY the FREIGHT or EXPRESS CHARGES, our option, to your nearest Railroad Station to any point in the UNITED STATES on all orders amounting to TEN DOLLARS or more, provided the order is for SMALL SEEDS only, when cash accompanies order. This does not include PEAS, BEANS, CORN, POTATOES, ONION SETS, CLOVER SEED, GRASS SEED, VETCH, RAPE, IMPLEMENTS, FERTILIZERS, INSECTICIDES, BULBS, COW PEAS or GRAIN of any kind which are shipped at purchaser's expense. If there is only a slight difference between freight and express charges, we will send by EXPRESS in each instance. Remittances should be made by POSTAL MONEY ORDER, EXPRESS MONEY ORDER, CERTIFIED CHECK, or by REGISTERED LETTER.

C. O. D. Orders

If goods are to be sent C. O. D. or SIGHT DRAFT BILL OF LADING ATTACHED, 25 per cent. of the amount must accompany the order.

Parties buying large quantities of any one variety will be quoted special prices on application.

All prices are Net, and while we do not think there will be any serious change, are made subject to change without notice.

Parcel Post Rate

Weight Limit

The weight limit within the first, second and third zones is now 70 pounds, and within all other zones 50 pounds.

Shipments of 20 pounds or over are cheaper if sent by Express beyond the third zone.

Domestic Parcel Post Rates Within U. S. and Possessions. Rates from Philadelphia, Pa.

	First Lb. or Fraction	Each Add. Lb. or Fraction
First Zone, within 50 miles of Grand Rapids.....	5c	1c
Second Zone, within 50-150 miles of Grand Rapids.....	5c	1c
Third Zone, within 150-300 miles of Grand Rapids.....	6c	2c
Fourth Zone, within 300-600 miles of Grand Rapids....	7c	4c
Fifth Zone, within 600-1000 miles of Grand Rapids.....	8c	6c
Sixth Zone, within 1000-1400 miles of Grand Rapids....	9c	8c
Seventh Zone, within 1400-1800 miles of Grand Rapids	11c	10c
Eighth Zone, all over 1800 miles of Grand Rapids.....	12c	12c

If in doubt obtain your zone rate from your Postmaster.

Express and freight rates are cheaper in large quantities. We make no charge for delivery to depot or express office.

We Do Not Warrant Seeds in Any Respect

The seeds offered in this catalogue have been carefully grown, selected, cleaned and tested for germination and we believe them to be first-class, but as so many conditions enter into making a crop, we give no warranty, either express or implied as to description, purity or productiveness and will not be responsible for the crop. If the purchaser does not accept the goods on these terms, they are to be returned at once, and, if paid for, the money will be refunded.



The Grand Rapids Growers Association

L. F. JONES, *Manager Seed Department*

Corner Wealthy St. and Ionia Ave., S.W.

Grand Rapids, Michigan

Doing the Impossible Things

The Grand Rapids Growers Association is an organization of producers of farm products gotten together for the specific purpose of doing things for its members which they heretofore as individuals have insisted on some outsider doing for them and which has not been entirely satisfactory, and in this respect the Grand Rapids Growers Association, the Kent County Farm Bureau and the State and National Farm Bureaus are all alike. They are doing things for you which you as an individual cannot do for yourself.

When you have bought seed, for instance, in the past, only once in a long time did you know the source of the seed and that was when you bought from a neighbor who grew the seed. Now you and all your neighbors (and you can call anybody in the state your neighbor if you want to) can buy seeds and know exactly where the seed came from, whether it be clover seed which came from some farm in this state or whether it be Grimm alfalfa that grew on a farm tucked away in the mountains in the West.

Due to the fact that a lot of individuals in this state realized that as individuals they were too small to go out and get their seed, you have an organization that is big enough to actually go into the field belonging to that farmer in the mountains in the West, put that seed in a sack, bring it to Michigan, clean it and take it to your own local organization. If we tried to do this as individuals we all know it never would be done. We could almost say it could not be done. But as a group of individuals it is being done.

And all sorts of problems too large for the individual are being worked out in this same way, not only on the purchase of seeds, but on the sale of seed, the sale of grain, hay, fruit, potatoes, and on the purchase of feeds, fence posts, fertilizers, etc. We can make the assertion without any exaggeration that the average farmer using commercial fertilizer this Spring will get back the entire amount he is putting into the Farm Bureau for this year's dues, simply because the organization is big enough and strong enough to reduce the price of fertilizers. Of course, this means co-operation both with your County and State organizations and with the local.

The Grand Rapids Growers Association is the local organization which the Farm Bureau does its work through. Your faith in the work these organizations are undertaking can be indicated only by your patronage. The service they can render you will admit is unquestionable, and you know how conditions have been in the past. You can figure that they will be that same way again unless you help out. Somebody in an attempt to injure the organization may offer you fertilizers, for instance, at a lower price. If they do you know why, and that is why the farmers got together. When you have anything to sell or want to buy, take the matter up with the Grand Rapids Growers Association. Through them you can get any service the Farm Bureau is capable of rendering and that we have only hinted at. We could not even list the things they can do for you because some form of service is added every day.

ROSWELL G. CARR,

County Agricultural Agent.

Market Gardeners' Price-List

WASHINGTON ASPARAGUS

This new giant rust-proof variety is the result of thirteen years' pedigree breeding by the Bureau of Plant Industry of the United States Department of Agriculture in endeavoring to produce a giant stalked, rust resistant strain of asparagus of high quality.

The pedigree breeding is still being continued, and improved seedlings will be brought out later.

Asparagus requires both male and female plants to produce seed.

A prepotent male plant named "Washington," with remarkable power of transmitting vigor and rust resistance to its offspring, has been the male parent in the strain we now offer. Every market gardener should have at least an acre of this grand variety. Postpaid, ounce, 20c; $\frac{1}{4}$ lb, 70c; 1 lb., \$2.50

BEETS

The Early Wonder Beet—The earliest beet in cultivation and one of the most profitable sorts for bunching; beets round, smooth, not rooty; color dark red. Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

Select Crosby's Egyptian Beet—This seed is all saved from selected bulbs, and the seed produces remarkable uniform type of smooth, dark red beets free from roots, except the one tap root. Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

Detroit Dark Red Beet (Select)—Seed grown from bulbs which are carefully selected and transplanted. These produce a very superior strain of the Detroit Dark Red beets, uniform in size and shape, and a very dark red color. Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

GRAND RAPIDS FORCING CUCUMBER

This is a selection from the Rawson Forcing Cucumber, which was a favorite forcing cucumber with the Grand Rapids growers twenty-two or three years ago. This selection was made by Blanksma Bros., who have been pedigree-breeding it for the past twenty years. The seed is saved from the best producing vines in the house, and is expensive because it takes a large number of very valuable cucumbers to produce a small amount of seed. In harvesting the seed, both ends are cut off and thrown away and only seed from the center of the fruit is saved. It is washed and the light seed raises to the top and is carried off with the pulp. The plant is a wonderful producer, the fruit medium in length, symmetrical, very handsome dark green color, quality first class. Postpaid, ounce, \$10.00; $\frac{1}{4}$ lb., \$30.00.

CELERY

Golden Self-Blanching—Our Golden Self-Blanching is grown in France by the best celery seed growers in the world, and is the true Paris Golden. It has been tested for purity as well as germination by having a crop grown from it, and we know there is no better. Postpaid, ounce, 75c; $\frac{1}{4}$ lb., \$2.50; 1 lb., \$9.00.

Newark Market—A large, vigorous growing sort, practically immune to celery blight or other diseases. Of the Easy Bleaching type but stalks much thicker and more free from suckers, and is a better keeper and holds the color better after being bleached. Splendid quality and very handsome golden yellow when blanched. Postpaid, ounce, \$1.60; $\frac{1}{4}$ lb., \$6.00; 1 lb., \$22.00.

Pride of the Market—A dwarf thick-stalked variety, vigorous grower, not subject to blight, and yields about as many boxes per acre as the White Solid, but not so good a keeper and should be marketed after the Golden Self-Blanching and before the White Solid. Our seed is grown by the originator. Postpaid, ounce, \$1.60; $\frac{1}{4}$ lb., \$6.00; 1 lb., \$22.00.

Dwarf White Solid—French grown seed which has been tested for purity last summer and is 98 per cent true to type and name. Very few hollow stalks, not more than two or three per one hundred; stalks dwarf thick, turning out more boxes per acre than any other green sort. Should not be transplanted to the field until about the middle of July for very late keeping. Blanches beautifully, quality superior. Stalks grow very upright and close together; color of leaves a very distinctive dark bluish green. Postpaid, ounce, 35c; $\frac{1}{4}$ lb., \$1.10; 1 lb., \$4.00.

CABBAGES

Danish Ball Head—This is the Wisconsin disease resistant strain of the Danish Ball Head or Wisconsin Number Eight. Prof. L. R. Jones of the Wisconsin University has solved the problem of the yellows disease in cabbage by breeding a yellows-proof variety which is practically immune from this disease. The type may not be quite as uniform as the original Danish Ball Head, but in its general habit of growth and good keeping qualities it resembles the original strain. Postpaid, ounce, 50c; $\frac{1}{4}$ lb., \$1.60; 1 lb., \$6.00.

CHINESE OR CELERY CABBAGE

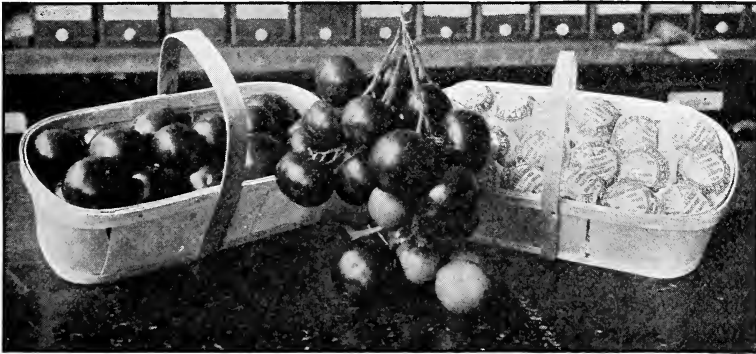
Pe Tsai—This new vegetable is becoming more popular every year and has generally been a money-maker for the market gardener. It has a delicate cabbage flavor, much milder than cabbage. The outer stalks may be eaten with salt like celery, or it makes a very delicious salad; can be used for cold slaw, or cooked like cabbage or used as spinach. The seed should not be sown till June or July, as the early sowing generally runs up to seed. They should be transplanted in rows about twenty inches apart and twelve inches apart in the row.

Chihili—This variety gives the best satisfaction here, especially when grown on muck. The heads are long, about sixteen inches, rather slim, coming to a point at the peak. Color a very dark bluish green, with the inner leaves and stalks blanched to a beautiful snow white. Postpaid, ounce, 40c; $\frac{1}{4}$ lb., \$1.40; 1 lb., \$5.00.

THE GRAND RAPIDS FORCING LETTUCE

This well-known variety is practically the only leaf lettuce grown for forcing in the world today. The Grand Rapids Forcing Lettuce was originated by Mr. Eugene Davis. Our seed is very free from sports, handsome curly leaf of a light green color and a strong, heavy grower and the quality is much better than the dark green Ohio type. Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

GRAND RAPIDS FORCING TOMATOES



This variety was originated by the late Mr. John Wieringa. The Grand Rapids Forcing is as great an acquisition to the line of forcing vegetables as was the Grand Rapids Forcing Lettuce.

The intense sexual vigor of the plant causes a great production of pollen and insures an immense setting of fruit. It is probably the only tomato that is self-fertilizing. Plant is a vigorous, robust grower and should be trimmed to about six feet in height. The fruit is good red color, fair size, firm and meaty. Skin is tough and it will stand shipping for long distance. Under favorable growing conditions each plant should produce eight pounds of marketable fruit. Our seed is saved from greenhouse grown tomatoes. Postpaid, ounce, \$5.00; $\frac{1}{4}$ lb., \$15.00; 1 lb., \$50.00.

STRAWBERRY PLANTS

Senator Dunlap—Early to mid-season. Strong grower and very productive. Berries dark red, medium large. One of our growers is a very large grower of strawberry plants of the best quality which we offer at \$12.00 per thousand or \$1.50 per 100, postpaid.

THE GRAND RAPIDS FORCING RADISH

This seed is saved from carefully selected bulbs of a very fine type of the Globe Radish. The bulbs are transplanted and grown on land free from volunteer radishes. Tops are small; every seed makes a handsome globe shaped dark red bottom which rarely becomes pithy even when quite large. Extremely early. Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.



Grand Rapids Forcing Lettuce

SWEET CORN

Golden Cream—Said to be a hybrid produced by crossing Golden Bantam with Country Gentleman. Ears much larger than Golden Bantam and comes in about same time. Not postpaid, quart, 40c; peck, \$2.60; bushel, \$10.00.

LETTUCE

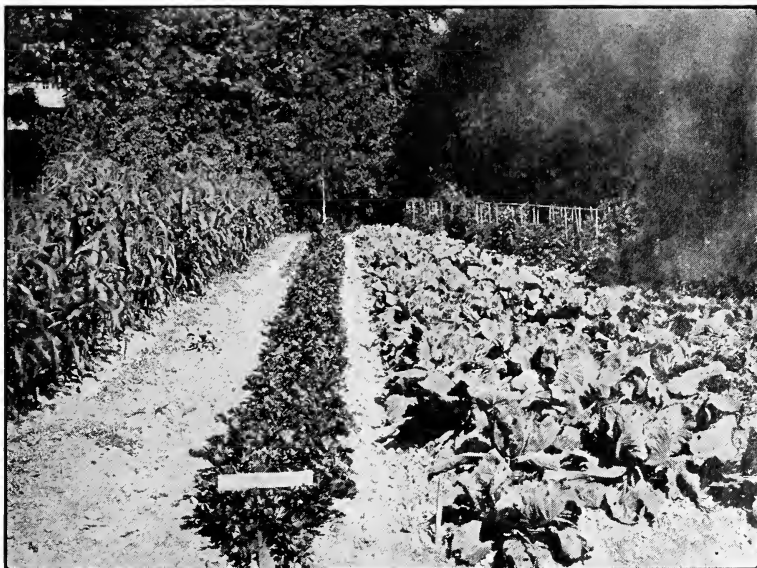
Big Boston Lettuce (Special)—Our Big Boston is grown in California, and the greatest care is taken in selecting and pedigree breeding, to produce a pure strain of Big Boston. It heads well under cool weather conditions and is an ideal variety for an early spring or late fall crop. Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

Unrivalled, or Green Leaved Big Boston Lettuce—French grown. Heads light green color without the red tinge to edge of the leaves, as the Big Boston, and will head better in hot weather. Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

All Seasons—Heads very large grayish green, leaves rather thick but blanch to a beautiful golden yellow. This variety wants hot weather to head well and is not satisfactory for early spring crop. Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

MUSKMELON

Osage (Special)—Seed saved from selected pedigree bred hills, and produces the true osage shape and quality. Flesh very sweet, thick; seed cavity small. Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 70c; 1 lb., \$2.50.



Home Garden

Grand Rapids Growers Association

Price List

ASPARAGUS

Washington (Special)—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 70c; 1 lb., \$2.50.
Palmetto—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 25c; 1 lb., 70c.
Conover's Colossal—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 25c; 1 lb., 70c.

ASPARAGUS ROOTS

Palmetto—Two-year-old, per 1000, \$7.50; per 100, \$1.00; not postpaid.

BEANS

Refugee or 1000 to 1—Quart, 40c; peck, \$3.00; bushel, \$11.00; not postpaid.
Kentucky Wonder—Quart, 45c; peck, \$3.25; bushel, \$12.00; not postpaid.
Dutch Case Knife—Quart, 50c; peck, \$3.50; bushel, \$13.20; not postpaid.
Seilbert's Early Lima—Quart, 50c; peck, \$4.00; bushel, \$15.00; not postpaid.
King of the Garden Lima—Quart, 50c; peck, \$4.00; bushel, \$15.00; not postpaid.
Fordhook Bush Lima—Quart, 50c; peck, \$4.00; bushel, \$15.00; not postpaid.
Burpee's Improved Bush Lima—Quart, 50c; peck, \$4.00; bushel, \$15.00; not postpaid.
Henderson's Bush Lima—Quart, 50c; peck, \$3.50; bushel, \$13.00; not postpaid.

Dwarf Wax Varieties

German Black Wax—Quart, 40c; peck, \$3.00; bushel, \$11.00; not postpaid.
Challenge Black Wax—Quart, 40c; peck, \$3.00; bushel, \$11.00; not postpaid.
Currie's Rust Proof—Quart, 40c; peck, \$3.00; bushel, \$11.00; not postpaid.
Wardwell's Kidney Wax—Quart, 40c; peck, \$3.00; bushel, \$11.00; not postpaid.
Davis Kidney Wax—Quart, 40c; peck, \$3.00; bushel, \$11.00; not postpaid.
Pencil Pod Black Wax—Quart, 40c; peck, \$3.00; bushel, \$11.00; not postpaid.

BEETS

Early Wonder (Special)—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.
Crosby's Egyptian (Special)—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.
Detroit Dark Red (Special)—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.
Crosby's Egyptian—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 20c; 1 lb., 60c.
Detroit Dark Red—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 20c; 1 lb., 60c.
Eclipse—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 20c; 1 lb., 60c.
Long Dark Blood—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 20c; 1 lb., 60c.
Early Blood Turnip—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 20c; 1 lb., 60c.

MANGEL WURTZLE

Mammoth Long Red—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 15c; 1 lb., 50c.

Golden Tankard—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 15c; 1 lb., 50c.

SUGAR BEETS

Giant Feeding Sugar—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 15c; 1 lb., 50c.

BRUSSELS SPROUTS

Carter's Perfection—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 60c; 1 lb., \$2.00.

CABBAGE

Copenhagen Market

Early Jersey Wakefield—
Postpaid, ounce, 30c; $\frac{1}{4}$
lb., \$1.15; 1 lb., \$4.00.

Early Winningstadt—Post-
paid, ounce, 30c; $\frac{1}{4}$ lb.,
\$1.15; 1 lb., \$4.00.

Copenhagen Early Market—
Postpaid, ounce, 35c; $\frac{1}{4}$
lb., \$1.20; 1 lb., \$4.00.

All Seasons—Postpaid, ounce,
30c; $\frac{1}{4}$ lb., \$1.00; 1 lb.,
\$3.50.

Henderson's Early Summer—
Postpaid, ounce, 30c; $\frac{1}{4}$
lb., 90c; 1 lb., \$3.00.

Premium Flat Dutch—Post-
paid, ounce, 25c; $\frac{1}{4}$ lb.,
80c; 1 lb., \$2.50.

Surehead—Postpaid, ounce,
25c; $\frac{1}{4}$ lb., 80c; 1 lb., \$2.50.

Danish Ball Head (Special)— Postpaid, ounce, 50c; $\frac{1}{4}$ lb., \$1.60; 1 lb., \$6.00.

Danish Ball Head—Postpaid, ounce, 30c; $\frac{1}{4}$ lb., \$1.00; 1 lb., \$3.50.

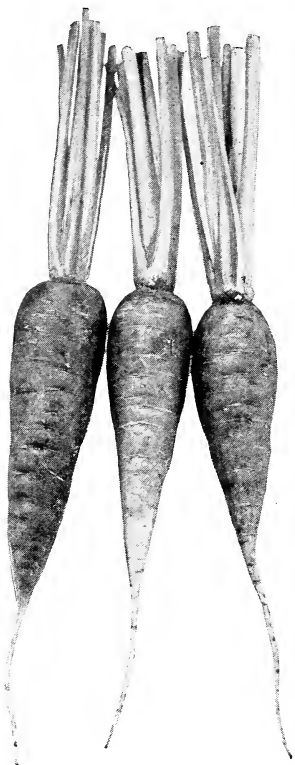
American Savoy—Postpaid, ounce, 30c; $\frac{1}{4}$ lb., 90c; 1 lb., \$3.00.

Red Stonehead—Postpaid, ounce, 35c; $\frac{1}{4}$ lb., \$1.30; 1 lb., \$5.00.

Mammoth Rock Red—Postpaid, ounce, 35c; $\frac{1}{4}$ lb., \$1.15; 1 lb., \$4.00.

CELERY CABBAGE OR CHINESE CABBAGE

Chihili (Special)—Postpaid, ounce, 40c; $\frac{1}{4}$ ounce, \$1.40; 1 lb., \$5.00.



CARROTS

French Short Horn—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 30c; 1 lb., \$1.00.

Chantenay—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.

Danver's Half-Long—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.

Improved Long Orange—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.

Oxheart—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.

White Belgian—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 15c; 1 lb., 50c.

Yellow Belgian—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 15c; 1 lb., 50c.

CELERY

White Plume—Postpaid, ounce, 25c; $\frac{1}{4}$ lb., 80c; 1 lb., \$3.00.

Golden Self-Blanching or Paris Golden (Special)—Postpaid, ounce, 75c; $\frac{1}{4}$ lb., \$2.50; 1 lb., \$9.00.

Newark Market (Special)—Postpaid, ounce, \$1.60; $\frac{1}{4}$ lb., \$6.00; 1 lb., \$22.00.

Pride of the Market (Special)—Postpaid, ounce, \$1.60; $\frac{1}{4}$ lb., \$6.00; 1 lb., \$22.00.

Dwarf White Solid (Special)—Postpaid, ounce, 30c; $\frac{1}{4}$ lb., \$1.15; 1 lb., \$4.00.

Winter King—Postpaid, ounce, 25c; $\frac{1}{4}$ lb., 90c; 1 lb., \$3.50.

Giant Pascal—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 80c; 1 lb., \$3.00.

Columbia—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 80c; 1 lb., \$3.00.

Soup or Cutting Celery—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

Celeriac or Turnip Rooted Celery—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

SWEET CORN

Early White Cob Cory—Not postpaid, quart, 30c; peck, \$2.00; bushel, \$7.50.

Howling Mob—Not postpaid, quart, 30c; peck, \$2.25; bushel, \$8.00.

Golden Bantam—Not postpaid, quart, 35c; peck, \$2.40; bushel, \$9.00.

Black Mexican—Not postpaid, quart, 35c; peck, \$2.50; bushel, \$9.00.

Early Minnesota—Not postpaid, quart, 30c; peck, \$2.25; bushel, \$8.00.

Country Gentleman—Not postpaid, quart, 30c; peck, \$2.00; bushel, \$7.50.

Early Evergreen—Not postpaid, quart, 25c; peck, \$1.85; bushel, \$7.00.

Stowell's Evergreen—Not postpaid, quart, 25c; peck, \$1.85; bushel, \$7.00.

Golden Cream—Not postpaid, quart, 40c; peck, \$2.60; bushel, \$10.00.

CORN SALAD

Large Seeded—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

CRESS OR PEPPERGRASS

Extra Curled—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 30c; 1 lb., \$1.00.

CUCUMBER

Grand Rapids Forcing (Special)—Postpaid, ounce, \$10.00; $\frac{1}{4}$ lb., \$30.00.

Early Fortune—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 25c; 1 lb., \$1.25.

Davis Perfect—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

Long Green—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

Chicago Pickling—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

EGG PLANT

Black Beauty—Postpaid, ounce, 40c; $\frac{1}{4}$ lb., \$1.40; 1 lb., \$5.50.

New York Purple—Postpaid, ounce, 50c; $\frac{1}{4}$ lb., \$1.60; 1 lb., \$6.00.

ENDIVE

Broad-Leaved Batavian—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 30c; 1 lb., \$1.00.

Moss Curled—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 30c; 1 lb., \$1.00.

Large Green Curled—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 30c; 1 lb., \$1.00.

KALE OR BORECOLE

Dwarf Green Curled—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

Tall Green Curled—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

LEEK

American Flag—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 75c; 1 lb., \$2.50.

LETTUCE

Grand Rapids Forcing (Special)—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

Early Curled Simpson—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.00.

Black Seeded Simpson—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.00.

Big Boston (Special)—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

Unrivalled or Green Leaved Big Boston (Special)—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

May King—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 30c; 1 lb., \$1.00.

Prizehead—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 30c; 1 lb., \$1.00.

All Seasons (Special)—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

MUSKMELON

Grand Rapids Early Market—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

Extra Early Hackensack—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

Large Hackensack—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

Emerald Gem—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

Rocky Ford—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

Hoodoo (Special)—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

Osage (Special)—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 70c; 1 lb., \$2.50.

Osage, Common—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.

WATERMELON

- Cole's Early**—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.
Kleckley's Sweet—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.
Tom Watson—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.
Triumph—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.
Peerless—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.
Sweetheart—Postpaid, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.

ONIONS

- Red Wethersfield**—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.
Southport Yellow Globe—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.
Southport Red Globe—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 60c; 1 lb., \$2.00.
Southport White Globe—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 70c; 1 lb., \$2.50.
Yellow Globe Danver's—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.
Michigan Yellow Globe—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 50c; 1 lb., \$1.70.
Ohio Yellow Globe—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 50c; 1 lb., \$1.70.
Prizetaker—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 50c; 1 lb., \$1.70.
White Portugal or Silverskin—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 60c; 1 lb., \$2.00.

ONION SETS

White Bottom Sets—Write for prices.

Red Bottom Sets—Write for prices.

Yellow Bottom Sets—Write for prices.

These sets are grown from seed sown very thickly, about 60 pounds per acre.

PARSLEY

- Triple Curled**—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 30c; 1 lb., \$1.00.
Champion Moss Curled—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 30c; 1 lb., \$1.00.

PARSNIP

- Hollow Crown**—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 60c.
Long Smooth Dutch or Sugar—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 60c.

PEAS

- Alaska**—Not postpaid, quart, 35c; peck, \$2.50; bushel, \$9.00.
Thos. Laxton—Not postpaid, quart, 50c; peck, \$3.75; bushel, \$14.00.
Gradus—Not postpaid, quart, 50c; peck, \$3.75; bushel, \$14.00.
American Wonder—Not postpaid, quart, 40c; peck, \$3.00; bushel, \$12.00.
Little Gem—Not postpaid, quart, 40c; peck, \$3.00; bushel, \$12.00.
Little Marvel—Not postpaid, quart, 50c; peck, \$3.75; bushel, \$14.00.
Peter Pan—Not postpaid, quart, 50c; peck, \$3.75; bushel, \$14.00.
Telephone—Not postpaid, quart, 40c; peck, \$2.75; bushel, \$10.00.
Alderman—Not postpaid, quart, 40c; peck, \$2.75; bushel, \$10.00.
Bliss' Everbearing—Not postpaid, quart, 30c; peck, \$2.25; bushel, \$9.00.
Champion of England—Not postpaid, quart, 40c; peck, \$3.00; bushel, \$12.00.
Dwarf Grey Sugar—Not postpaid, quart, 50c; peck, \$3.50; bushel, \$14.00.

PEPPER

- Ruby King**—Postpaid, ounce, 40c; $\frac{1}{4}$ lb., \$1.40; 1 lb., \$5.00.
Bull Nose or Large Bell—Postpaid, ounce, 40c; $\frac{1}{4}$ lb., \$1.40; 1 lb., \$5.00.

PUMPKIN

- Sugar Pie**—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.25.
Large Cheese or Kentucky Field—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.
King of the Mammoths—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.
Connecticut Field—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.

RADISH

- Grand Rapids Forcing (Special)**—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.
Vick's Scarlet Globe—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.
Cooper's Sparkler—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.00.
French Breakfast—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.00.
Scarlet Turnip White Tip—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.00.
Icicle—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.00.
Long Scarlet Short Top—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.00.
White Bottom—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; 1 lb., \$1.00.
Long Black Spanish—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 25c; 1 lb., 75c.
Round Black Spanish—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 25c; 1 lb., 80c.
Chinese Rose—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 25c; 1 lb., 80c.

RHUBARB

- Victoria**—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 30c; 1 lb., \$1.00.

RUTABAGA

- American Purple Top**—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 60c.

SALSIFY

- Mammoth Sandwich Island**—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

SPINACH

- Round Summer Thick Leaved**—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 15c; 1 lb., 35c.
Long Standing—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 15c; 1 lb., 30c.
Victoria—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 15c; 1 lb., 30c.

SQUASH

- Yellow Bush Scallop**—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.
White Bush Scallop—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.
Summer Crookneck—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.
Chicago Warty Hubbard—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 60c; 1 lb., \$2.25.
Golden Hubbard—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 60c; 1 lb., \$2.00.
Hubbard—Postpaid, ounce, 20c; $\frac{1}{4}$ lb., 60c; 1 lb., \$2.25.

TOMATO

- Grand Rapids Forcing (Special)**—Postpaid, ounce, \$5.00; $\frac{1}{4}$ lb., \$15.00; 1 lb., \$50.00.
Bonny Best—Postpaid, ounce, 30c; $\frac{1}{4}$ lb., \$1.00; 1 lb., \$3.75.
John Baer—Postpaid, ounce, 35c; $\frac{1}{4}$ lb., \$1.25; 1 lb., \$4.75.
Chalk's Early Jewell—Postpaid, ounce, 30c; $\frac{1}{4}$ lb., \$1.00; 1 lb., \$3.75.
Dwarf Stone—Postpaid, ounce, 35c; $\frac{1}{4}$ lb., \$1.25; 1 lb., \$4.50.
Earliana—Postpaid, ounce, 35c; $\frac{1}{4}$ lb., \$1.00; 1 lb., \$3.75.
Early Michigan—Postpaid, ounce, 35c; $\frac{1}{4}$ lb., \$1.25; 1 lb., \$4.50.
Ponderosa—Postpaid, ounce, 40c; $\frac{1}{4}$ lb., \$1.50; 1 lb., \$5.50.

TOBACCO

Connecticut Seed Leaf—Postpaid, ounce, 50c; $\frac{1}{4}$ lb., \$1.75; 1 lb., \$6.00.

Havana—Postpaid, ounce, 50c; $\frac{1}{4}$ lb., \$1.75; 1 lb., \$6.00.

TURNIP

New White Milan—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

Purple Top Strap Leaf—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 65c.

Purple Top White Globe—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 65c.

Cow Horn—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.

White Egg—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 75c.

Robertson's Golden Ball—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 65c.

Yellow Globe—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 65c.

Yellow Aberdeen—Postpaid, ounce, 10c; $\frac{1}{4}$ lb., 20c; 1 lb., 65c.

HERBS

Anise—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

Caraway—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 25c; 1 lb., 75c.

Dill—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 20c; 1 lb., 50c.

Lavender—Postpaid, ounce, 30c; $\frac{1}{4}$ lb., 90c; 1 lb., \$3.00.

Sage—Postpaid, ounce, 40c; $\frac{1}{4}$ lb., \$1.15; 1 lb., \$4.00.

Summer Savory—Postpaid, ounce, 15c; $\frac{1}{4}$ lb., 40c; 1 lb., \$1.50.

Thyme—Postpaid, ounce, 60c; $\frac{1}{4}$ lb., \$2.25; 1 lb., \$8.00.



Home Garden

Grand Rapids Growers Association

FLOWER SEEDS

Happy are they who can look back with loving thoughts to the beautiful old-fashioned flower gardens their mothers or grandmothers grew and loved.

"Say it with Flowers."

SWEET ALYSSUM

Postpaid, packet, 5 cents; ounce, 50c.

ASTERS

Queen of the Market, Early, Mixed—Packet, 5c; ounce, 90c.

Giant Comet, Mixed—Packet, 5c; ounce, \$1.00.

Crego, Mixed—Packet, 5c; ounce, \$1.00.

DAISY

Bellis or Double Daisy, Mixed—Packet, 5c; ounce, \$4.00.

CANDYTUFT

Mixed—Packet, 5c; ounce, 25c.

CARNATION

Tall Margaret, Mixed—Packet, 5c; ounce, \$2.00.

Dwarf Margaret, Mixed—Packet, 5c; ounce, \$2.00.

CASTOR BEANS

Zanzarbarensis—Packet, 5c; ounce, 25c.

COSMOS

Early Flowering, Mixed—Packet, 5c; ounce, 50c.

CALLIOPSIS

Mixed—Packet, 5c; ounce, 40c.

COREOPSIS

Perennial, Mixed—Packet, 5c; ounce, 60c.

COXCOMB

Dwarf, Mixed—Packet, 5c; ounce, \$1.00.

Tall, Mixed—Packet, 5c; ounce, \$1.00.

CALENDULA

(Pot Marigold)—Packet, 5c; ounce, 40c.

CANTERBURY BELL

Single, Mixed—Packet, 5c; ounce, 50c.

Double, Mixed—Packet, 5c; ounce, \$1.50.

Cup and Saucer—Packet, 5c; ounce, \$2.00.

DELPHINIUM OR LARKSPUR

Giant Hyacinth, Annual, Mixed—Packet, 5c; ounce, 75c.

Formosum, Perennial, Mixed—Packet, 5c; ounce, \$5.00.

DIANTHUS OR PINKS

Chinese Double, Mixed—Packet, 5c; ounce, 75c.

DIGITALIS OR FOXGLOVE

Mixed—Packet, 5c; ounce, 75c.

EVERLASTING FLOWERS

Mixed—Packet, 5c; ounce, 60c.

FORGET-ME-NOT

Mixed—Packet, 5c; ounce, \$1.00.

FOUR O'CLOCK

Marvel of Peru, Mixed—Packet, 5c; ounce, 30c.

GAILLARDIA

Blanket Flower, Mixed—Packet, 5c; ounce, 60c.

GOURDS

Mixed—Packet, 5c; ounce, 25c.

HOLLYHOCK

Double, Mixed—Packet, 5c; ounce, \$1.50.

MARIGOLD

Legion of Honor, Dwarf, Mixed—Packet, 5c; ounce, 60c.

Tall French, Mixed—Packet, 5c; ounce, 60c.

MIGNONETTE

Machet, Mixed—Packet, 5c; ounce, 60c.

MORNING GLORY

Common, Mixed—Packet, 5c; ounce, 20c.

Japanese, Mixed—Packet, 5c; ounce, 20c.

NASTURTIUMS

Dwarf, Mixed—Packet, 5c; ounce, 10c.

Tall, Mixed—Packet, 5c; ounce, 10c.

PANSY

Giant Mixture—Flowers very large and great diversity of colors.

This mixture contains all of the good ones. Packet, 5c; ounce, \$3.50.

Good Mixture—Not so many colors as the Giant Mixture, but flowers large and good assortment of colors. Packet, 5c; ounce, \$1.50.

PETUNIA

Large Flowering, Mixed—Packet, 5c; ounce, \$2.00.

PHLOX DRUMMONDI

Splendid Mixture—Packet, 5c; ounce, \$2.00.

Decussati (Perennial)—Packet, 5c; ounce, \$2.50.

POPPY

Carnation Flowered, Mixed—Packet, 5c; ounce, 25c.

Shirley—Packet, 5c; ounce, 40c.

PORTULACA

(Rose Moss), Double, Mixed—Packet, 5c; ounce, \$2.50.

SWEET PEAS

Grandiflora Types, Mixed—Packet, 5c; ounce, 10c.

Spencer, Mixed—Packet, 5c; ounce, 20c.

SALVIA SPLENDENS

Mixed—Packet, 5c; ounce, \$2.50.

VERBENA

Mammoth, Mixed—Packet, 5c; ounce, \$1.50.

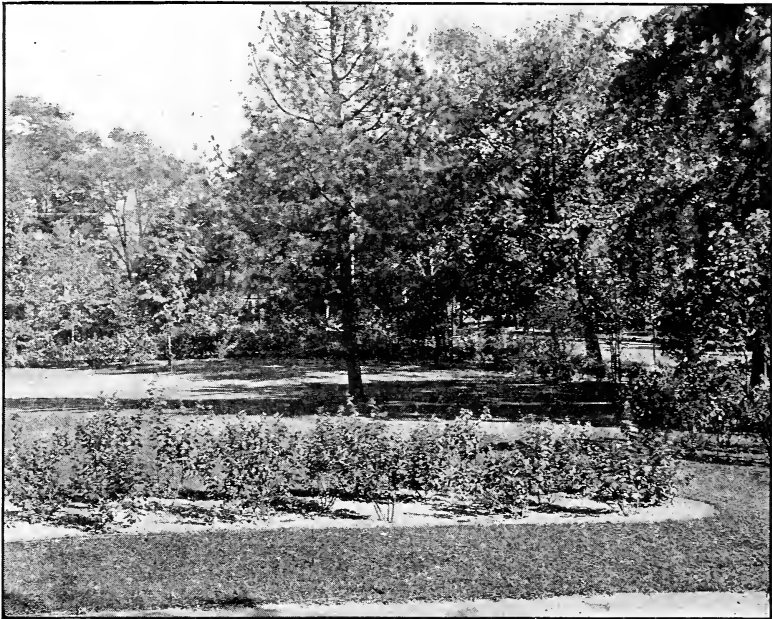
SWEET WILLIAM

Special Mixture—Packet, 5c; ounce, 75c.

ZINNIA

Mammoth, Mixed—Packet, 5c; ounce, \$1.00.

A Beautiful Lawn



Our Grass Seeds Make the Finest Lawns

There is nothing which adds more to the external attractiveness of a home than a beautiful lawn. You may have such by providing the right conditions.

To obtain a good lawn it is very essential that care be used in selecting the seed. Many people are under the impression that there is danger in getting weed seed in lawn mixtures; this impression no doubt has been formed because it is a common practice top grading off with rich dirt taken from some location that has not been under cultivation, hence contains the seeds that are common to that locality. When such soil is used it should be cultivated long enough to free it from such seeds, then sow a reliable lawn mixture, when better results will be obtained than by sodding, and at much less expense.

To start a new lawn from seeding, have the soil thoroughly spaded up, enriched with commercial fertilizer (Farmers' Favorite, see page 31), or with cattle or sheep manure (see pages 32 and 33), level and roll it well to make it compact. Select a still, damp day for seeding; sow one-half of the seed from North to South and half from East to West, rake it over and roll again. When the grass comes up, replant bare or thin spots.

After the lawn is started it still needs attention as does the old lawn. Lawn grass is a voracious feeder and must have the elements necessary to its growth. While stable manure contains these elements, its objectionable features, unsightliness, odor and weed seeds combine to make it highly objectionable.

Pulverized Sheep Manure (see page 33), or a high grade Commercial Fertilizer, like Darling's 'Farmers' Favorite Brand (see page 31) supply these same elements without the objectionable features, are easy to apply and get real results.

It is also a fact that a very large percentage of lawns need the addition of Lime Rock (see page 33) to sweeten the soil. This particularly applies to the soil under trees that from constant drip and absence of sunshine has become sour and covered with green moss. In this case it should be broken up with a sharp-toothed rake and treated with Ground Lime Rock (see page 33), and followed with an application of Pulverized Sheep Manure (see page 33), or Farmers' Favorite (see page 31), and reseeded with Shady Lawn Mixture.

The addition of Ground Lime Rock will materially improve practically any lawn. To make grass green and start quick growth an application of Nitrate of Soda (see page 35) will give desired result quickly. To apply, dissolve the Nitrate in water and sprinkle on the lawn. Should be used sparingly and often. Use about two ounces to gallon of water.

Proper fertilization is necessary for beautiful lawns.

LAWN GRASS

Sunny Lawn Mixture—This mixture contains no annual grasses but only those of lasting value and hardiness, and will produce an even, dense growth of permanent sward which improves in velvety density with age. Price, per lb., 40c; 3 lbs., \$1.10; 5 lbs., \$1.75.

Shady Lawn—Will make a dense, thick growth in light soils and will make a very satisfactory lawn even in shady situations. This mixture is composed mostly of imported grasses, several of them quite expensive. Price, per lb., 50c; 3 lbs., \$1.35; 5 lbs., \$2.00.

GRASS SEEDS

Our endeavor is to handle only the very best and purest grass seeds. We supply only the best and highest germinating seeds and our prices are based on supplying this quality.

Prices

White Clover (White Dutch)—Per lb.....	75c
Kentucky Blue Grass—Per lb.....	40c
Red Top, Fancy—Per lb.....	20c
Red Top, Unhulled—Per lb.....	15c
English Rye Grass—Per lb.....	20c

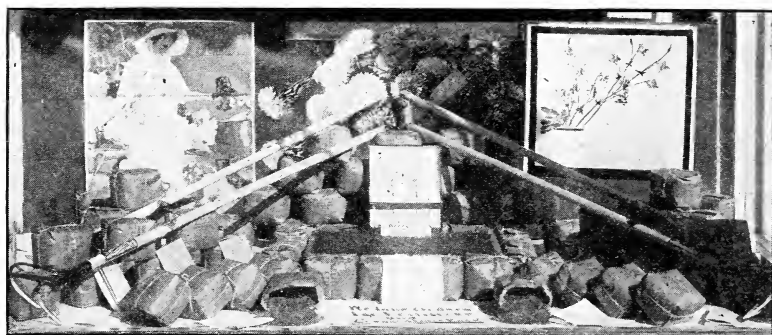
Orchard Grass—Valuable for pasture. Will last longer on light soil than any known grass. Makes good hay if cut before it becomes woody. Sow from a half bushel to two bushels per acre. Write for price.

Red Top—Valuable for hay or pasture on low, wet land. Sow hulled seed about 8 to 10 pounds per acre. Fancy, re-cleaned or solid seed, about 3 or 4 pounds per acre. Write for price.

GRASS SEEDS—Continued

Bromis Inermis or Awnless Brome Grass—Will stand droughts and produce heavy crop on poor soils, where other grasses will not thrive. Good grass for dry hillsides or light sandy soil. Sow 2 or 3 bushels per acre. Write for price.

Kentucky Blue Grass (June Grass)—One of the best grasses for permanent pasture. As it takes some time to become established, it is better to sow in mixtures. It is a perennial and prefers a lime soil. Sow about 50 pounds per acre. Write for price.



Grass Seed Window Display

Canadian Blue Grass—Perennial, 6 to 12 inches. Succeeds on soil too poor for Kentucky, and for a Michigan pasture grass we prefer it to Kentucky Blue Grass, as it is better adapted to Michigan weather conditions. It is well relished by stock of all kinds, and is especially good for Milch Cows. Sow, if alone, about 40 pounds per acre. Write for prices.

Tall Meadow Oat Grass—Perennial, 2 to 5 feet. One of the most productive grasses either for pasture or hay. As it produces such a large quantity of leaves or aftermath, it is especially valuable for pastures, and no mixture should be without a fair amount of this seed. It has been tried out well in Michigan. It stays fresh and green when many other pasture grasses are dried up. It stands punishment well, and will produce satisfactory yields on poor, sour soils, and stands both heat and cold. Seed very light, 12 pounds per bushel. Sow about 40 pounds per acre, if alone. Write for prices.

Meadow Fescue—Perennial, 18 to 24 inches. One of the best pasture grasses for wet soil, and its feeding value will compare with any grass grown in America. Does well all over the corn belt in Michigan, as well as the New England States. Sow, if alone, about 50 pounds per acre. Write for prices.

ALFALFA

Alfalfa has added millions to the wealth of the Western States, and is now being successfully grown in every State in the Union. Until the last few years Alfalfa has not been a complete success in Michigan, but we now know that liming the land and inoculating the seed, together with the right preparation of the soil, will almost invariably result in a good catch, in fact, in a dry season alfalfa is more sure than either mammoth or medium clover. Alfalfa should produce three crops per year in Michigan. Chemical analysis shows Alfalfa Hay has a much larger quantity of protein than clover, is about equal to wheat bran, and feeding tests made at experimental stations in the Western States with all kinds of stock, prove the feeding value of Alfalfa Hay. It makes a well balanced ration for growing stock of all kinds. There is probably as much value below the surface in a field of Alfalfa as there is in the hay or seed crop, as it is the longest-rooted plant of all the clover family. It is nothing for it to grow roots three feet in length the first year. The deep roots, together with the great production of nodules of nitrogen gathering bacteria, makes it one of the best of cover crops to plow under, as it adds both humus and nitrogen to the soil. One of the first matters to determine in sowing Alfalfa Seed is the acid condition of the soil which is easily done by the aid of blue litmus paper, which can be bought at any drug store. Take a little soil from different parts of the field, mix thoroughly and place a little in a glass, pour on water enough to make a thin mush, put in a piece of litmus paper; if after an hour it turns red, the soil is aciduous and needs lime. If air-slacked lime is used, sow about twelve hundred pounds per acre, but ground lime-stone is considered better as it does not have the caustic or burning effect of the burnt lime, and is equally as good in correcting the soil acidity.

In preparing the soil, if the land has been badly run and is deficient in humus, about twenty loads of barnyard manure per acre should be plowed under at least six months before seeding to Alfalfa. The land should be plowed either in the fall or early spring, then thoroughly disced and harrowed until about June first, or some prefer July, then sow about ten or twelve pounds of seed per acre.

Whether founded on fact or not, there is a general belief that Alfalfa Seed grown on non-irrigated land in the northwestern states of Montana, Dakota or Idaho, does better in Michigan than imported seed, or that grown in the Southwest. In buying Alfalfa Seed, always buy the best (not the best some particular dealer may have at that time), but the brightest, cleanest seed to be found. The cost of seed is a small item when the failure to secure a stand is considered. Always inoculate the seed. By sending 25 cents to the Bacteriological Department, East Lansing, Michigan, they will send you enough culture to inoculate one bushel of seed, or sow about 400 pounds per acre of dirt from an old Alfalfa or Sweet Clover patch. Our seed is grown in the Northwestern States on non-irrigated land, and is better than 99 per cent. pure and from 95 to 97 per cent. germination. We can find no better. Farm Bureau Seed at Farm Bureau Prices.

Genuine Grimm Alfalfa—This famous alfalfa is noted for its extreme hardness. It successfully stands extreme cold and excessive heat. It has a branching root system with small tap root and produces an abundant crop of forage. Farm Bureau Prices.

SWEET CLOVER

White Blossom (Melelotus Alba) hardy biennial. While White Blossom Sweet Clover has been used more for plowing under as a green manure crop, it is assuming the first rank as a pasture or hay producer. It is especially valuable for pastures. Stock turned on to sweet clover pasture early in the spring, soon learn to eat it greedily and thrive, as they do on no other grass. It contains an element that has been used as a tonic by the medical profession for years, which gives sweet clover the slightly bitter taste which all kinds of stock soon learn to like. White sweet clover will not cause bloat in sheep, cows, horses, as do other legumes. One acre of sweet clover will furnish pasture enough for fifty or sixty hogs. Sweet clover, if sown in the spring, may be pastured in late summer and fall.

Harvesting for Hay—White Blossom Sweet Clover, seeded in April or May, should make one light cutting of hay the first season. The proper time to cut sweet clover for hay is when the buds start from the crown, the same as Alfalfa. Most growers claim that it injures the plant to cut a crop of hay the first season. If it is cut high, however, so as to leave some leaves to each plant, we do not think it would damage the plants for next season's crop.

The second season the crop of hay may be harvested in June, when coming into bloom, but cut about eight inches high, or you will kill the plants at this time. A second crop of hay may be secured, or a moderate crop of seed. Sweet clover hay is equal if not superior to alfalfa, if harvested before it becomes too woody, and stock will prefer sweet clover hay, after they once acquire a taste for it, and there is no more waste in feeding than in other clovers.

Harvesting for Seed—A larger yield will be obtained if a first crop of hay is not harvested. A claim of ten bushels per acre has been made, but five or six bushels is a good average yield. Cut for seed when about three-fourths of the seed-pods have turned brown. Work only when the dew is on. A McCormick self-rake is a very satisfactory machine for harvesting. Leave it in the bunches deposited by the machine for two or three weeks before threshing. It is better to have a good shower while in the bunches.

White Blossom Sweet Clover as a Fertilizer—It will thrive on either sandy or clay soil, and is the greatest nitrogen gathering plant of all of the numerous family of legumes. To get the best results it should not be plowed under until the second season. When once established, no more attention need be paid to the field until ready to plow for other crops.

Seeding—First be sure that the field is not sour, or if it is, treat with lime as for alfalfa. Always inoculate either the seed or the soil. If the soil has been badly run, a liberal amount of phosphorous should be applied. Sweet clover requires a firm seed-bed. Do not sow on newly-plowed land. Buy the best seed you can get. Ours is 99 per cent. pure and contains no noxious weed seeds. Sow about 15 pounds of seed per acre. Farm Bureau Seed at Farm Bureau Prices.

SAND VETCH

Sand or Hairy Vetch shares with sweet clover the honor of giving the best results in restoring fertility to worn-out land or making poor sandy soils productive. Sand Vetch has no equal as a cover crop. It can be sown in the corn field just after the last cultivation, and it will make a mass of green stalks and leaves to plow under about the middle of May, or it may be sown after harvesting oats, and plowed under for corn the next spring. Hay made from Sand Vetch is about three per cent. higher in protein content than alfalfa hay, and is more eagerly eaten by stock. When sown with oats or any spring grain, it will come on after crop is harvested and make splendid fall pasture, and can be plowed under the next spring for corn or potatoes. Always inoculate the seed unless Sand Vetch has been grown on the land within one or two years. Sow from 30 to 40 pounds per acre. Our Sand Vetch is better than 99 per cent. pure. Farm Bureau Seed at Farm Bureau Prices.

CLOVER

Medium Red or June Clover—By far the most important of all clovers for practical purposes. It lives two years and grows about two feet high; very valuable for plowing under to enrich the soil, adding humus and nitrogen. We handle only one grade—the best—as it is folly to buy anything else. Sow in spring or fall, 8 to 12 pounds per acre if used without other grasses. Farm Bureau Prices.

Mammoth or Large Red Clover—Mammoth Clover is quite distinct from Medium, growing to nearly twice the size; is coarser and a little later. It can be grown successfully on poorer soil than Medium Clover. It is used extensively for building up worn-out land. Sow about 8 to 12 pounds per acre, when sown alone. Farm Bureau Prices.

Alsike Clover—A perennial and the most hardy of all clovers. It prefers damp, loamy soil. It is extremely leafy, making hay of a fine texture. Does not readily winter kill, and is valuable to sow with other clovers and grasses as it increases the yield of hay. Is the best clover for moist soil. Sow either in spring or fall, about 6 pounds per acre when sown alone. Farm Bureau Prices.

Timothy—The most important of all the grasses for hay, and is adapted to a wider range of conditions than any other variety of grass. It is the hardiest of all grasses and excels in feeding value. Sow early in the spring or fall, 10 to 12 pounds per acre if sown alone, less if mixed with other grasses. Farm Bureau Prices.

Sudan Grass—A tall annual grass reaching a height of 7 to 9 feet when planted in rows and cultivated, and 4 to 5 feet when sown broadcast. The hay is greatly relished by all stock and has exceptionally high feeding value. Is adapted to most all soils. Farm Bureau Prices.

Millet—Usually grows from 2½ to 4 feet high and makes excellent hay. For hay sow broadcast 25 to 30 pounds per acre, May 1st to August 1st. Does well on dry and light soils. Farm Bureau Prices.

FODDER CORN

Dry fodder corn is the most satisfactory substitute for hay; it nearly if not quite equals in feeding value timothy and clover. All stock eat it greedily and thrive on it.

It yields from three to five tons of dry fodder per acre, being a much larger yield than timothy and clover will give, making a far more profitable forage crop to grow.

It can be sown as late as July first, with a reasonable assurance of a fair growth of fodder, making it an ideal catch crop, as the work can be done after the haying rush work is over. It can be sown at the usual corn planting time and sowing rape between the rows after the last cultivation, it makes splendid summer pasture for hogs or sheep.

LEAMING FODDER CORN

This variety is preferred by most dairymen for filling silos, for the reason that the corn matures the large ears (in any ordinary season it will ripen), and gives more grain in the ensilage. Stalks very large and leafy, and grows an immense amount of forage to the acre.

It requires from one peck to one-half bushel of seed per acre, drilled in rows one way. Farm Bureau Prices.

RED COB ENSILAGE

A gigantic southern white corn, producing immensely large ears, rarely maturing in this latitude. The stalks grow from 12 to 15 feet in height, with long, broad leaves from the ground to the tassel. Stalks very thick at the butt, juicy, tender and as sweet as sugar corn, and all stock eat it with relish. Many dairymen prefer it for the silo, for the reason that it produces such an enormous amount of silage (from 15 to 25 tons per acre). It is especially valuable for the dry fodder when cut and kept in the shock until fed. It will produce a good crop of forage, even when sown as late as July.

Red Cob Ensilage is one of the best crops to raise for the purpose of killing quack grass or other foul weeds when the land is badly infested. For killing quack grass plow the sod late in the fall, which with the freezing of the roots will greatly injure the plants, cultivate with a spring-tooth harrow every week in April and May. Plant Red Cob Ensilage in drills, using one bushel of seed per acre, smothering the quack and other weeds. For silos or fodder, sow from one-half to one bushel per acre. Farm Bureau Prices.



Michigan State Farm Bureau Fertilizers

Purchasing Department (Fertilizer)

The 3-8-6, 2-8-10, 2-10-4 and 0-8-10 brands are high grade potato and vegetable fertilizers. These are excellent brands for potato and truck growers and should allow ample room for choice according to the ideas of the individual consumer. The 2-10-4 should give satisfactory results with sugar beets on the lighter soils and is well fitted for corn on soils requiring an application of potash. The 0-8-10 is a heavy potash fertilizer especially intended for muck soils.

The 2-12-2 is probably the best all-around and nearest fool-proof complete fertilizer and has been used to a great extent throughout Michigan. It is usually applied to crops such as corn, wheat and oats on soils which have not been well manured or upon which legumes in regular rotation have not been grown. This formula should be a good buy. If by previous experience the farmer believes potash does not pay, the 2-12-0 can be used—a formula which is very frequently used on wheat and corn.

The 0-12-2 formula is commonly known as an alkaline fertilizer carrying only phosphoric acid and potash. It is suitable to use on legumes which are able to supply their own nitrogen and on fields covered by a rotation in which legumes frequently occur interspersed with liberal applications of barnyard manure.

Sixteen per cent. acid phosphate furnishes but one elemental plant food—namely, phosphoric acid. This element gives very apparent results on grain crops, especially wheat, which is a heavy phosphoric acid feeder. Much more acid phosphate is used than complete fertilizers. There is no question but what the 16 per cent. gives good results in most instances, but the question arises whether it would not be advisable to use ammonia or potash or both in some instances where acid phosphate only has been used for the past three or four years.

Bone meal is the old-time favorite for top dressing pastures and meadows. The plant foods being rather slowly available, the plants are fed throughout the growing season. It can well be used wherever a slowly available fertilizer is desired.

Summarized briefly, then, we can consider the 3-8-6, 2-8-10, 2-10-4, and 0-8-10 brands as potato and truck fertilizers to be used on crops where the cash return will justify a heavy investment in fertilizers. 2-10-4, 2-12-2, and 2-12-0 can be grouped as general all-around fertilizers which can be used on practically all of the grain crops. The 0-12-2 and 0-8-10 are special purpose fertilizers adapted to legumes and muck crops respectively. 16% acid phosphate will meet all conditions where in the opinion of the users, ammonia and potash are not necessary.

Members are asked to get in touch with their County Agents. It is important that you assemble your orders AT ONCE. We should have them in our office not later than Dec. 15th. It is an absolute certainty that thousands of dollars can be saved members on this purchase. Act quick. Please start mailing your orders in immediately. Let us make this the largest purchase of this commodity of any state in the Union and put our Michigan State Farm Bureau on record as going over the top. BOOST! This Department wants to give you service.

Fertilizer Special

Purchasing Department (Fertilizer)

It is estimated 100,000 tons of commercial fertilizer will be used on the 1921 spring crops in Michigan.

Fertilizer should be cured at least three months before shipping. Our order for this commodity should be placed without further delay.

Price that we can buy at depends considerably on the volume of our purchase. The Purchasing Department is negotiating with several of the best manufacturers and nothing but the best quality will be purchased. We plan to have it packed under the Michigan State Farm Bureau brand.

On the recommendation of good authority on the subject we have decided to have the following grades manufactured for us:

Present Prices		Present Prices	
3-8-6.....	\$56.75	2-12-0.....	\$40.00
2-8-10.....	60.90	0-12-2.....	33.95
2-12-2.....	44.90	16% acid phosphate.....	31.60
2-10-4.....	47.90	Bone meal.....	
0-8-10.....	50.00		

In these formulas the first figure stands for the parts of ammonia, the second figure stands for parts of available phosphoric acid and the third stands for the parts of potash.

All of the above grades are considered high analysis fertilizers and although somewhat higher in price than some on the market, they are really cheaper in the end for the farmers to buy, as it is a recognized fact that the greater the total number of units of plant food the less the cost per unit. We believe that these formulas will meet with all the requirements of Michigan farmers even though their methods of farming are various.

So many factors affect crops, of which the fertilizers are but one, that it is almost impossible to make specific recommendations as to what formula should be used for any one crop. The farmer must learn for himself from simple experiments what fertilizers yield a profit under his system of farming. The following recommendations, which are very general, are sanctioned by the M. A. C. However, as indicated above, the consumer is in the best position to know his own needs.

An important point to be considered before purchasing fertilizers is that farm produce is at a lower level than it has been in the last four years, while fertilizers have maintained their high level. It is, therefore, evident that fertilizing practices which have proved profitable under war conditions may not give returns at the present time. It is not recommended that the use of fertilizers be discontinued, but the necessity of careful consideration is apparent. Acid phosphate is almost sure to give good returns; nitrogen and potash may or may not pay out. The user must decide for himself. When in doubt use acid phosphate.

If you desire any of these brands of Michigan State Farm Bureau Fertilizers place the order with the Grand Rapids Growers Association.

General Directions for Using Fertilizer

Never mix the fertilizer with the seed.

The best way to apply fertilizer to field crops is to use a fertilizer drill, otherwise sow broadcast after plowing or spading, then thoroughly harrow or rake into the soil before planting or sowing.

Be sure to work the fertilizer into the soil as thoroughly as possible.

Wheat, oats, rye, barley, potatoes, use not less than two hundred to four hundred pounds per acre if drilled in. If used broadcast, use one-fourth more to obtain the same results.

Corn—If a fertilizer drill is used, run through all holes and deeper than if you were sowing wheat. If not drilled, sow broadcast, using from two hundred to four hundred pounds per acre. A quick, early start can be gained by using a handful to two or three hills, mixing well with the soil, so that it does not come in direct contact with the seed.

Beans—Drill in with a fertilizer drill, letting all holes run fertilizer, using two hundred pounds per acre, or it can be applied broadcast and harrowed in. Some apply by drilling in the full amount with the seed; that is, letting all the fertilizer run through the same hole as the seed. This is not as good a way if the field is to be sown to wheat, oats or barley. On corn and beans many farmers are applying the fertilizer about ten days before planting the crop, claiming better results, as the fertilizer is partially dissolved at the time of planting.

Grass and Meadows—Use early in the spring, sowing broadcast two hundred to four hundred pounds per acre.

Potatoes and Vegetables—Sow broadcast at the rate of five hundred to fifteen hundred pounds to the acre. If used in hill, or trench, mix well with the soil and do not let seed come in contact with the fertilizer.

For potatoes, when using large quantities of fertilizer, the best way is to use part broadcast and the balance in the hill with drill.

Tomatoes or anything that is transplanted, use from a teaspoonful to a small handful to the plant at transplanting time, according to the size of the plant, mixing well with soil, and for big results, apply a small handful to each plant after same is well started, and cultivate in thoroughly.

Tobacco—Drill or put in the hill or apply broadcast as you prefer, using four to six hundred pounds per acre.

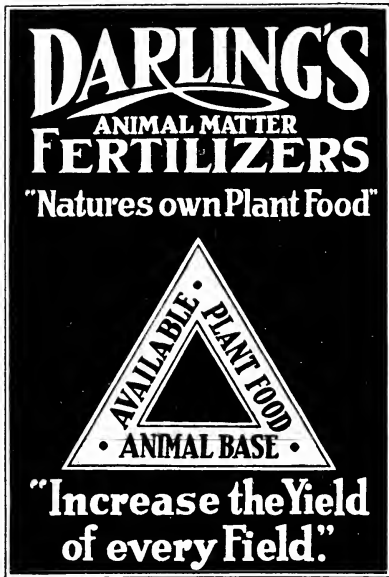
Melons, Squash, Etc.—Use eight hundred to one thousand pounds per acre broadcast, or if you put in a hill apply one pint to each plant, mixing thoroughly with the soil.

Strawberries—For new beds, apply broadcast where rows are to be and mix thoroughly with the soil. If old beds, apply between the rows and work into soil thoroughly, being careful not to let any of the fertilizer come in contact with the vine.

Orchards and Fruit Trees—For trees in bearing, apply broadcast, beginning one-third of the way from the trunk to the outer reach of the branches. Plow in with gang plow or cultivate in thoroughly, using from five hundred to two thousand pounds per acre.

BETTER FARMING WITH DARLING'S ANIMAL MATTER FERTILIZERS

Every crop harvest removes from the soil a certain amount of plant food and if this is not replaced by equal quantity of such elements as Nitrogen, Phosphoric Acid, Potash, etc., the soil fertility cannot be maintained, and, in consequence, you have what is called a run-down farm.



This has been thoroughly demonstrated in the vegetables grown under glass; when, by applying the right kind of fertilizer, we grow four crops each year on the same soil, without rotation of crops, or turning under clover, etc.

A lack of Nitrogen is indicated by weak stalk growth, failure to start quickly, and a sickly, yellowish-green color of the leaves. Short-strawed grain crops indicate a shortage of Nitrogen. Grain crops slow to ripen, and with heads not properly filled out, indicate that more Phosphoric Acid is needed. In gardening, failure of cabbage to harden the head, of cauliflower to make the button, of onions to ripen down, is often due to lack of Phosphoric Acid. Root crops are generally heavy feeders on Potash, as are also some other crops grown for their leaf,

such as tobacco, etc. Sugar beets need Potash to set the sugar, potatoes to make the starch; and to get well filled and sturdy grain crops, Potash is essential.

Keep in mind, as well, the natural deficiencies of your soil. Peat and muck soils are strong in Nitrogen, but exceedingly weak in Phosphoric Acid and Potash.

Clay soils are better supplied with plant food than sandy soils, but are colder, resulting in slower growth in the early spring, and have much of their plant food in unavailable forms.

Finally, favorable weather conditions throughout the growing season, we all agree, are essential. Without it, no soil will produce to its maximum; and its natural fertility, as well as the addition of plant food from Fertilizers, will be of no avail.

We handle Darling's Animal Matter Fertilizers—the best brand made today. Let us sell you in Darling's Fertilizer the plant food you are selling off the farm each year, in milk, butter, live stock, grain and vegetables. Increase your yields, which means bigger profits, and increase the fertility or producing power of your soil at the same time. This means a more valuable farm as each year goes by.

DARLING'S FARMERS' FAVORITE

Guaranteed Analysis

	Per Cent
Ammonia (Animal Tankage).....	3.
Nitrogen (Animal Tankage).....	2.47
Available Phosphoric Acid.....	8.
Insoluble Phosphoric Acid (Animal).....	2.
Potash (K ₂ O).....	1.

This is a high-grade all-around fertilizer, especially adapted to all field crops, and is better for market gardeners' use than nine-tenths of the "Onion Growers," "Potato Growers," etc., on the market.

When making field tests with this brand to compare with cheap goods, use a less quantity of it against a larger quantity of the cheap goods in accordance with the price.

Write for Prices

1 sack, 125 lbs.....	.....
8 sacks, 1000 lbs.....	.....
16 sacks, 2000 lbs.....	.....

DARLING'S GRAIN GROWER

Guaranteed Analysis

	Per Cent
Ammonia (Animal Tankage).....	1.
Nitrogen (Animal Tankage).....	.82
Available Phosphoric Acid.....	9.
Insoluble Phosphoric Acid (Animal).....	2.
Potash (K ₂ O).....	1.

For most soils, this brand contains enough ammonia (all derived from high-grade Animal Tankage) to give the young plant a good start, a sufficient amount of Phosphoric Acid to raise a bumper crop, and enough Potash to help stiffen the stalk and put weight in the grain.

Write for Prices

1 sack, 125 lbs.....	.....
8 sacks, 1000 lbs.....	.....
16 sacks, 2000 lbs.....	.....

Special prices when loaded in mixed cars with other fertilizer.

DARLING'S SURE WINNER

Guaranteed Analysis

Per Cent

Ammonia (Animal Tankage).....	1.
Nitrogen (Animal Tankage).....	.82
Available Phosphoric Acid.....	10.
Insoluble Phosphoric Acid (Animal).....	2.
Potash (K ₂ O).....	.5

This brand is especially adapted to land containing a good supply of ammonia. For instance, where land has been heavily manured, or clover has been turned under, this brand can be used with excellent results, as clover robs the soil of phosphoric acid and potash and practically returns nothing but ammonia or nitrogen. This brand contains enough nitrogen to give the plant an early start and maintain the growth until it gets sufficient root to take up the nitrogen in the soil.

Write for Prices

1 sack, 125 lbs.....	.....
8 sacks, 1000 lbs.....	.....
16 sacks, 2000 lbs.....	.....

WIZARD BRAND PULVERIZED CATTLE MANURE

Only the best quality fresh manure gathered from brick paved Stockyard cattle pens, is used in preparing Wizard Brand Cattle Manure. They are entirely free from mixture of other kinds and can be relied upon for safe, uniform and satisfactory results.

This is especially recommended for the Florist, Greenhouse Vegetable Grower, and for gardens, both vegetable and flower.

Also particularly good for new seeding, clover, alfalfa, etc. Either worked into seed bed or used as a top dressing.

Try it on your garden.

Prices

100 lbs. in 100-lb. bag	\$ 2.75
500 lbs. in 100-lb. bags.....	12.00
1000 lbs. in 100-lb. bags.....	18.00
2000 lbs. in 100-lb. bags.....	35.00

Special prices on carloads or when loaded in mixed cars with other fertilizer.

WIZARD BRAND PULVERIZED SHEEP MANURE

This is unusual quality pure animal manure reduced to commercial form by a careful process of separation and grinding and evaporation of moisture under high temperature which destroys the weed seeds.

Humus is one of the most important and valuable elements in the soil, and the fact that this product supplies humus, recommends it to the thoughtful consumer. Especially recommended for greenhouse use, lawns, gardens, etc., although equally good for general farm purposes.

Prices

50 lbs. in 50-lb. bag	\$ 1.50
100 lbs. in 100-lb. bag	2.75
500 lbs. in 100-lb. bags.....	12.00
1000 lbs. in 100-lb. bags.....	21.00
2000 lbs. in 100-lb. bags.....	40.00

Special prices on carloads or when loaded in mixed cars with other fertilizer.

GROUND LIME ROCK

Practically all the land in Michigan needs Ground Lime Rock to neutralize the acid in the soil. In other words, to sweeten the soil.

It is practically indispensable for alfalfa and similar crops. In fact, should be used freely on most land for any crop.

Most lawns would be benefited by application of Ground Lime Rock.

Prices

1 sack, 100 lbs.....	\$0.75
5 sacks, 500 lbs.....	2.50
10 sacks, 1000 lbs.....	4.00
20 sacks, 2000 lbs., F. O. B. Grand Rapids.....	7.00
In bulk, 2000 lbs., F. O. B. Sibley, Mich.....	1.80
In sacks, 100 lbs., F. O. B. Sibley, Mich.....	3.80

Special carload prices on application.

Special price when loaded in mixed carloads with other fertilizer.

We strongly recommend the liberal use of Ground Lime Rock.

TENNESSEE GROUND ROCK PHOSPHATE

Guaranteed Analysis

29¾ per cent Phosphoric Acid (13 per cent Phosphorus).

Ground 95 per cent through 100 Mesh Screen.

This is strongly recommended by many as the cheapest method of obtaining Phosphoric Acid. Usual method is to run it through the stable and out with the manure during the winter. Many also advocate its use direct on the land.

This is the best grade of these goods we can obtain.

Prices—Subject to Change

1 sack, 80 lbs.....	\$ 1.00
12 sacks, 960 lbs.....	11.00
25 sacks, 2000 lbs.....	20.00

Get our prices on Phosphate in carloads, bulk and in 80-lb. paper sacks. Also special prices when loaded in mixed cars with other fertilizers.

STEAMED GROUND BONE

Guaranteed Analysis

	Per Cent
Ammonia (Bone)	2.25
Nitrogen (Bone)	1.85
Total Phosphoric Acid.....	28.

This is a soft steamed bone and the staple article for fall seeding. It is wholly animal matter. It is especially adapted for use on grain, alfalfa, meadows, and for greenhouse purposes.

Prices—Subject to Change

1 sack, 125 lbs.....	\$ 3.50
8 sacks, 1000 lbs.....	27.00
16 sacks, 2000 lbs.....	50.00

We are in position to furnish bone in carloads or loaded in mixed cars with other fertilizer at prices that will interest you.

ACID PHOSPHATE

Guaranteed Analysis

Available Phosphoric Acid.....16 per cent

This is an exceptionally good grade of Acid Phosphate and often exceeds the guaranteed analysis.

If you want Acid Phosphate for home mixing or for use by itself, we are sure these goods will please you.

Are in position to name the very best prices consistent with quality goods on carloads or in mixed cars with other fertilizer.

Let us quote you.

Prices—Subject to Change

1 sack, 125 lbs.....	\$ 2.25
8 sacks, 1000 lbs.....	17.00
16 sacks, 2000 lbs.....	31.50

Acid Phosphate will increase the yield of wheat. Try it. It will pay you, and the whole world needs wheat.

NITRATE OF SODA

Nitrate of Soda in its commercial form is 95 per cent pure and contains about 15½ per cent of Nitrogen, equal to about 19½ per cent of Ammonia.

As the source of Nitrogen or Ammonia in home mixed fertilizers Nitrate of Soda is the most desirable, particularly for all quick growing crops and when early maturity is desired.

We handle Nitrate of Soda in car lots and are headquarters for this article in North and Western Michigan.

Can make special prices when loaded in mixed carloads with other fertilizers.

Prices—Subject to Change

Less than 100 lbs., 10 cents per lb.

1 sack, 100 lbs.....	\$ 10.00
1 sack, 200 lbs.....	12.00
5 sacks, 1000 lbs.....	56.00
10 sacks, 2000 lbs.....	100.00

SULPHATE OF AMMONIA

Less than 100 lbs., 10 cents per lb.

1 sack, 100 lbs.....	\$ 10.00
1 sack, 200 lbs.....	12.00
5 sacks, 1000 lbs.....	56.00
10 sacks, 2000 lbs.....	110.00

MURIATE OF POTASH

Prices—Subject to Change

Less than 200 lbs., 10 cents per lb.

1 200-lb. sack	\$ 17.00
5 200-lb. sacks, 1000 lbs.....	80.00
10 200-lb. sacks, 2000 lbs.....	150.00

HOME MIXERS' FERTILIZER TABLE

Any Formula at a Glance

Exact number of pounds of each material required for the equivalent of 2,000 lbs. of Ready Mixed Fertilizer of analysis desired.

Percent- ages or Units Desired	Ammonia from Nitrate of Soda	Available Phosphoric Acid		Actual Potash from Muriate of Potash	Potash from Kainit 12%
		From 14% Acid Phosphate	From 16% Acid Phosphate		
1	110	143	125	40	166
2	220	286	250	80	333
3	330	429	375	120	500
4	*440	571	500	160	667
5	550	714	625	200	833
6	660	*857	750	240	1000
7	770	1000	875	280	1167
8	880	1143	1000	320	1333
9	990	1286	1125	360	1500
10	1100	1429	1250	*400	1667
11	1210	1571	1375	440	1833
12	1320	1714	1500	480	2000

Example: To make a fertilizer containing 4 per cent Ammonia, 6 per cent available Phosphoric Acid, 10 per cent Potash. By looking in the percentage column for 4 per cent and in the Nitrate column we find 440 lbs., in the 16 per cent Acid Phosphate column opposite 6 per cent we find 750 lbs., and in the Muriate of Potash column opposite 10 per cent we find 420 lbs.; the sum of the 440 lbs., 750 lbs., and 420 lbs. is 1,610 lbs., which is equivalent to and contains the same amount of Plant food as 2,000 lbs. of the 4-6-10 manufactured fertilizer.

Any combination can be figured in the same way.

"BLACK LEAF 40"

(Sulphate of Nicotine)

A concentrated solution of Nicotine Sulphate containing 40 per cent of Nicotine. For sheep and cattle dipping and spraying for Pear Thrips, Green Aphis, Pear Psylla, Hop Louse, Black Aphis, Wooly Aphis, etc.

Prices

10-lb. tins	per tin	\$13.75
2-lb. tins	per tin	3.25
½-lb. tins	per tin	1.00
1-oz. bottle	per bottle	.25

INSECTICIDES

"Nico Fume" Liquid (Nicotine Solution) for Fumigating or Spraying.

A highly refined solution of **"free"** Nicotine, containing 40 per cent of Nicotine.

Prices

8-lb. tins	per tin	\$14.50
4-lb. tins	per tin	7.50
1-lb. tins	per tin	2.00
¼-lb. tins	per tin	.65

PURE PARIS GREEN

This is strictly pure Paris Green of the very best quality and will give satisfaction.

Prices

¼-lb. boxes	\$ 0.20
½-lb. boxes .....	.35
1-lb. boxes .....	.45
2-lb. boxes .....	.80
5-lb. boxes	2.00
14-lb. kits	5.50
28-lb. kits	11.20
56-lb. kits	22.40
100-lb. kegs	39.00

We also wholesale Paris Green and give special prices to dealers. It will pay dealers to get our prices before buying. We can save you money.

Remember, that we are large handlers of Paris Green and usually have stock for immediate shipment when others are out.

COPPER SULPHATE OR BLUE VITROL

We are headquarters for Copper Sulphate, buy in carlots and are in position to supply it either wholesale or retail.

If you use Copper Sulphate let us hear from you.

Guaranteed 99 per cent pure. Large blue crystals.

Prices

Barrel lots, about 400 lbs.....	per lb.,	\$0.11c
Less than barrel lots.....	per lb.	.15

GLIDDEN ARSENATE OF CALCIUM

Similar in many respects to Arsenate of Lead and for many purposes Arsenate of Calcium is virtually as effective as Arsenate of Lead, and very splendid results have been secured with it.

It is especially recommended for use on seed fruits, such as Apples, Pears and Quinces, but on tender foliage such as that of the Peach and Japanese Plum, it is apt to cause burning, and we do not recommend Arsenate of Calcium for this purpose.

It is a splendid substitute for Paris Green for spraying potatoes, and will be found equally satisfactory and more economical.

Directions for Use—When used with Bordeaux Mixture or Lime-Sulphur, use three-fourths to one pound to fifty gallons of solution. When used alone, use three-fourths to one pound to fifty gallons of water, adding two or three pounds of good stone lime. For dusting, mix with eight or ten parts of gypsum or lime.

Prices

1-lb. package.....	\$ 0.50
5-lb. package.....	2.25
10-lb. package.....	3.80
25-lb. drum.....	9.00
50-lb. drum.....	17.50
100-lb. drum.....	33.00
200-lb. drum.....	65.00

ARSENATE OF LEAD

Dry or Powdered. Can be used either dry with Bellows or Powder Sprayers if dissolved in water with ordinary sprayers. Dry Arsenate of Lead will go farther and accomplish more than any paste or liquid arsenate of heat.

Prices

½-lb. package.....	25c each
1-lb. package.....	40c each
5-lb. package.....	35c per lb. or \$ 1.75 per package
10-lb. package.....	30c per lb. or 3.00 per package
25-lb. drums.....	27c per lb. or 6.75 per package
100-lb. drums.....	25c per lb. or 25.00 per package
200-lb. drums.....	24c per lb. or 48.00 per package

GLIDDEN DRY BORDEAUX MIXTURE

Glidden Dry Powdered Bordeaux Mixture can be used wherever paste Bordeaux Mixture has been used heretofore. It is splendidly adapted for both fruit tree and truck crop work, and can be used in combination with any of **Glidden's** insecticides, either as a dry or as a liquid spray.

Prices

1-lb. package.....	\$ 0.25
5-lb. package.....	1.10
10-lb. package.....	2.00
25-lb. drum.....	5.00
50-lb. drum.....	9.00
100-lb. drum.....	18.00

WHALE OIL SOAP

A wash for foliage and trunks of plants and trees. Kills insects and eggs.

Price, 1 pound.....\$0.20

BORDEAUX ARSENATE

A combination of dry Bordeaux and Arsenate of Lead in powder form, which is ready for use by simply adding cold water.

It kills all leaf-eating insects and at the same time protects the crop against all fungus disease, like apple scab, potato blight. We advise our customers to use Bordeaux Arsenate on their fruit trees, potatoes, tomatoes, cucumbers, melons, etc. It sticks and protects the foliage, increases the crop and improves the quality. This spray saves mixing and is easy to apply.

Prices

1 pound	\$ 0.35
5 pounds	1.50
10 pounds	2.50
25 pounds	6.00
50 pounds	11.50
100 pounds	22.00

HAMMOND'S SLUG SHOT

Slug Shot is a light, fine powder, easily distributed either by duster, bellows, or in water by spraying. Kills currant worms, potato bugs, cabbage worms, and all leaf-eating insects as well as lice on plants and poultry.

Prices

1 pound, postpaid	\$0.25
5 pounds, postpaid .....	.75

CUT WORM KILLER

Prices

1 pound	\$0.30
5 pounds	1.25

MASTICA LIQUID GLAZING PUTTY

"Best for Glazing"

For glazing greenhouses, hot-beds, sash, etc. Better than putty. Does not crack. Always remains soft.

Price, per gallon.....\$2.75

AJAX ASBESTOS BLACK GLAZING CEMENT

This product is a cement-like composition that is made to be applied with an ordinary putty bulb. Its exceptionally long life is largely due to the fact that it never thoroughly hardens. Only the outside which is exposed to the oxygen of the air, forms an elastic, tough skin, below which the material remains soft and plastic. Because of this, extremes of temperature do not cause it to crack or otherwise deteriorate.

Also, due to the fact that it does not thoroughly harden, glass cemented with it can be shifted when necessary without the loss of breakage that so often results when hard drying putties are used.

Price, in 9-gallon kits.....\$2.75

TWINBOW'S OLD ENGLISH GLAZING PUTTY

Never gets hard and is easily removed when necessary, and does not pull away from the sash or glass, and will last for years. It always sticks when you want it to stick.

Price, per gallon.....\$2.75

SCOLLAY'S PUTTY BULB

A useful tool for applying liquid putty in glazing greenhouses, etc.

Price, each.....\$1.25

SCOLLAY'S ANGLE NECK SPRINKLER

For sprinkling plants, flowers, clothes, etc.

Price, each.....\$1.25

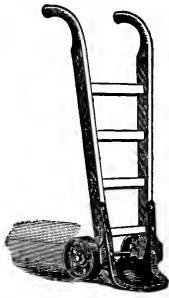
THERMOMETERS

No. 2401. For greenhouse use, each.....\$0.15

BAG TRUCKS

Wood frame and handles, strongly braced and ironed.

Price, per truck.....\$3.00



SKINNER IRRIGATION SUPPLIES

The Skinner System is the most improved method of irrigation, and is used outdoors on gardens, lawns, etc., as well as for greenhouse work. Write for booklet.

Model A Drilling Machine	\$11.70
Model B Drilling Machine	14.70
Large Tap Drills, $\frac{1}{8}$ —24, each.....	.35
Small Tap Drills, 12—24, each.....	.25
Silver Stream Outdoor Nozzles, each.....	.06
Silver Stream Indoor Nozzles, each.....	.08 $\frac{1}{2}$
Greenhouse Nozzles, ST-50, 10 ft. throw, each.....	.09 $\frac{1}{2}$
Greenhouse Nozzles, ST-70, 12 $\frac{1}{2}$ ft. throw, each.....	.09 $\frac{1}{2}$

Unions

		Fittings	
		Tee	Cross
No. E—Inlet 1 in.	Outlet $\frac{3}{4}$ to 1 in.....	\$2.50	\$2.95
No. N—Inlet 1 $\frac{1}{4}$ in.	Outlet 1 $\frac{1}{4}$ in.	3.50	3.75
No. R—Inlet 1 $\frac{1}{2}$ in.	Outlet 1 $\frac{1}{2}$ in.	3.95	4.65
No. S—Inlet 2 in.	Outlet 2 in.	4.85	5.85

We would like to have you call and see us about this system. Tell us your plans.

Our experience is at your service.

AUTO SPRAY

Capacity, 3 $\frac{1}{2}$ gallons. Weight empty, 9 pounds; loaded, 36 pounds. Solution tank made either of heavy galvanized iron or brass as desired. Tank strongly riveted and will last for years.

Prices

Galvanized Iron.....	\$6.00
Brass	9.00



"NORCROSS" HAND CULTIVATORS AND WEEDERS

We handle the "Norcross," a most complete garden hoe, and a modern type of hand cultivator.

Prices

5-prong, 4-ft. handle, each.....	\$1.25
3-prong, 4-ft. handle, each.....	1.00
3-prong, "Midget," 9-in. handle, each.....	.50

Quantity prices—
less NC%.

Special booklet on
request.



PLANTING, MATURITY AND WEIGHT TABLE

This is for field planting, and where plants and roots are stated, it is necessary to have them ready before-hand. The third column indicates the distance that the plants should stand in the rows, and where seed is sown they should be thinned out to this distance. The fifth column indicates maturity from the time plants are planted in the field, or seed is sown in the field. Also note that the last column is the approximate weight of seeds and not products. Time of planting and maturity is for latitude of Louisville.

* Indicates that the crop can either be planted in the Spring or Fall; if in the Spring, February to April; in the Fall, August and September.

	Time to Sow or Plant	Distance of Rows Apart	Distance of Plants in Rows	Quantity to Sow or Plant per Acre	Ready to Use	Approx. Weight of Seeds per Bu. in Lbs.
Artichoke—Tubers	Apr.	2½ ft.	2 ft.	6 to 8 bu.	Sept. to Oct.	50
Asparagus—Seeds	Apr.	15 in.	4 to 6 in.	8 to 10 lbs.	3 years	60
Asparagus—Roots	Mar.	6 to 8 ft.	12 to 18 in.	4,000 to 7,000	2 years	.....
Beans—Dwarf	Apr. to Aug.	2½ ft.	4 to 6 in.	1½ bu.	8 weeks	60
Beans—Navy	May to June	2½ ft.	6 in.	¾ to 1 bu.	Winter	60
Beans—Soja	May to June	Broadcast	Broadcast	1 to 1½ bu.	Fall & winter	60
Beans—Pole	May to June	4 ft.	3 ft.	½ to ¾ bu.	10 weeks	60
Beets—Table	Apr. to July	12 to 18 in.	4 in.	6 to 8 lbs.	1½ to 3 mo.	19½
Beets—Sugar	Apr. to June	2½ to 3 ft.	6 to 8 in.	5 to 6 lbs.	Fall & winter	19½
Buckwheat	June to Aug.	Broadcast	Broadcast	¾ to 1 bu.	Fall	50
Cabbage—Plants (early)	Apr.	30 in.	15 to 20 in.	10,000 to 14,000	June & July	.....
Cabbage—Plants (late)	July to Aug.	3 ft.	2 ft.	7,260	Fall & winter	.....
Carrot	Apr. to June	1 to 2 ft.	3 to 4 in.	1 to 2 lbs.	45 to 70 days	28
Cauliflower—Plants	Apr.	2½ ft.	2 ft.	8,000 to 10,000	3 months	.....
Celery—Plants	June to Aug.	3 to 4 ft.	6 to 9 in.	15,000 to 30,000	4 to 5 mo.	37
Clover—Red and Sapling	*Mar. to Sept.	Broadcast	Broadcast	8 to 10 lbs.	Next year	60
Clover—Alsike	*Mar. to Sept.	Broadcast	Broadcast	5 to 8 lbs.	Next year	60
Alfalfa	*Mar. to Sept.	Broadcast	Broadcast	12 lbs.	Next year	60
Clover—Crimson	July to Sept.	Broadcast	Broadcast	12 to 15 lbs.	May 1	60
Corn—Garden	Apr. to July	3 to 3½ ft.	9 to 15 in.	4 to 6 qts.	2 to 3 mo.	44 to 50
Corn—Field (drills)	Apr. to July	3½ to 4 ft.	10 to 18 in.	6 to 8 qts.	3 to 4 mo.	56
Corn—Field (checked)	Apr. to July	3½ to 4 ft.	3½ to 4 ft.	4 qts.	3 to 4 mo.	56
Cucumber	Apr. to July	4 to 5 ft.	4 ft.	2 lbs.	2 to 2½ mo.	39
Egg Plant—Plants	May to June	3 ft.	2½ to 3 ft.	5,000 to 6,000	60 days	.....
Endive	Aug.	18 in.	12 in.	4 to 5 lbs.	2 to 2½ mo.	26
Grass Seeds—(Light)	Apr. to Oct.	Broadcast	Broadcast	1½ to 2 bu.	Next year	14
Grass Seeds—(Lawn)	Apr. to Oct.	Broadcast	Broadcast	60 to 80 lbs.	8 to 10 weeks	20
Horseradish—Roots	Mar.	2½ ft.	12 to 18 in.	12,000 to 15,000	6 to 8 mo.	.....
Kale—Spring	Apr. to Sept.	Broadcast	Broadcast	6 to 8 lbs.	5 to 6 weeks	56
Kohl Rabi—Plants	Apr.	1½ to 2 ft.	10 to 12 in.	21,000 to 34,000	2½ to 3 mo.	.....
Lettuce—Plants	*Mar. to Sept.	12 to 15 in.	6 to 8 in.	40,000 to 80,000	1½ to 2 mo.	.....
Melon—Musk	May to July	4 to 6 ft.	4 to 6 ft.	2 lbs.	2½ to 3 mo.	32
Melon—Water	May to June	8 to 10 ft.	8 to 10 ft.	3 lbs.	3 months	35
Millet	May to July	Broadcast	Broadcast	½ bu.	6 to 7 weeks	50
Mustard	*Mar. to Apr.	Broadcast	Broadcast	4 to 5 lbs.	6 to 8 weeks	56
Oats—Spring	Apr.	Broadcast	Broadcast	1½ to 2 bu.	July 1	32
Onions—For large bulbs	Apr.	12 to 14 in.	.....	4 to 5 lbs.	July to Aug.	.....
Onions—For sets	Apr.	10 to 12 in.	.....	40 to 50 lbs.	July	39
Onion Sets	Apr.	12 in.	4 in.	15 to 16 bu.	June	32
Parsley	Mar. to Apr.	12 in.	.....	3 lbs.	July	42
Parsnips	Mar. to Apr.	18 in.	4 to 6 in.	5 to 7 lbs.	Fall & winter	18
Peas—Wrinkled	Apr. to May	2½ to 3 ft.	.....	1 to 2 bu.	7 to 9 weeks	56
Pepper—Plants	May 15	30 in.	15 to 18 in.	11,000 to 14,000	2 to 2½ mo.	.....
Potatoes—(Early)	May and June	27 in.	10 to 12 in.	8 to 12 bu.	June to July	60
Potatoes—(Late)	July to Aug.	30 in.	15 to 18 in.	8 to 10 bu.	Oct.	60
Sweet Potato—Plants	May 15	3 ft.	20 to 24 in.	7,000 to 8,000	Sept. to winter	.....
Pumpkin	May	8 to 10 ft.	8 to 10 ft.	2 lbs.	Fall	24
Radish	Apr. to Aug.	10 to 15 in.	3 in.	8 to 10 lbs.	24 to 40 days	56
Rape	*Apr. to Sept.	Broadcast	Broadcast	6 to 8 lbs.	6 to 8 weeks	50
Rhubarb—Roots	Apr. to Apr.	4 ft.	2 to 3 ft.	5,000 to 7,000	Next year	.....
Rye	Aug.	Broadcast	Broadcast	1 to 2 bu.	Apr. 20	56
Salsify	Apr.	1½ to 2 ft.	3 to 4 in.	5 to 6 lbs.	Fall & winter	48
Spinach—Early	*Apr. to Sept.	Broadcast	Broadcast	10 to 15 lbs.	8 weeks	26
Squash—Spring	May	4 ft.	3 ft.	3 lbs.	July	22
Squash—Winter	May to June	6 to 8 ft.	6 to 8 ft.	2 lbs.	Fall & winter	.....
Tobacco—Plants	May to June	3 to 3½ ft.	2½ to 3 ft.	4,800 to 5,000	Sept. to Oct.	.....
Tomato—Plants	May to July	4 ft.	3 to 4 ft.	2,700 to 3,600	July until frost	.....
Turnip	*Apr. to Sept.	Broadcast	Broadcast	1½ to 2 lbs.	1½ to 2 mo.	56
Vetch	Aug. to Oct.	Broadcast	Broadcast	50 lbs.	May	60

